What is Claimed:

1. A method for identifying an agent that increases glucose dependent insulin secretion in pancreatic islet ß-cells comprising the steps of:

(a) obtaining a pancreatic islet ß-cell culture;

(b) contacting the pancreatic islet ß-cell culture with an agent of interest; and

(c) detecting whether said agent of interest has an inhibitory affect on the activity of phosphodiesterase 1C in said pancreatic islet ß-cells, the presence of an inhibitory effect indicating that the agent of interest may be useful for increasing insulin secretion.

2. The method of Claim 1 wherein said cultured pancreatic islet ß-cells are cultured insulinoma cells derived from transgenic mice that express the SV40 large T antigen in pancreatic islet ß-cells.

3. The method of Claim 1 wherein the inhibition to phosphodiesterase 1C activity is detected by measuring substrate concentrations of cGMP phosphodiesterase activity.

4. A novel phosphodiesterase 1C inhibitor identified by the method of Claim 1.

5. A method of treating type II diabetes comprising administering to a subject an amount of a phosphodiesterase 1C inhibitor effective to treat the type II diabetes.

6. The method of Claim 5 wherein said phosphodiesterase 1C inhibitor is a compound of the general formula isobutylmethylxanthine derivatives with substitutions at positions 2 and 8.

7. The method of Claim 6 wherein said phosphodiesterase 1C inhibitor is selected from the group consisting of eburnamenine-14-carboxylic acid ethyl ester (vinpocetine), zaprinast, 4-[3-(cyclopentyloxy)-4-methoxyphenyl]-2-pyrrolidinone (rolipram), 1,6-dihydro-2-methyl-6-oxo-(3,4'-bipyridine)-5-carbonitrile (milrinone), and/or combinations thereof.

8. The method of Claim 6 wherein said phosphodiesterase 1C inhibitor is administered in an amount effective to regulate blood sugar levels in said subject.

9. The method of Claim 6 wherein said phosphodiesterase 1C inhibitor is administered in an amount

effective to achieve a blood level ranging from about 1 to about 1000 μg/Kg.